IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): KIM, Young-Ky et al.   Examiner: LIM, Steven

Serial No.:   10/726,087   Group Art Unit:2617

Filed: December 2, 2003   Docket:678-245 CON (P8696)

                                  Dated: September 17, 2008

For: **DEVICE AND METHOD FOR EXCHANGING FRAME MESSAGES OR DIFFERENT LENGTHS IN CDMA COMMUNICATION SYSTEM**

Mail Stop Appeal Brief-Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313

TRANSMITTAL OF APPELLANTS' BRIEF ON APPEAL

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Respectfully submitted,

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

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APPELLANTS' BRIEF ON APPEAL

REAL PARTY IN INTEREST

The real party in interest is Samsung Electronics Co, Ltd, the assignee of the subject application, having an office at 416, Maetan-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Republic of Korea.

RELATED APPEALS AND INTERFERENCES

To the best of Appellant's knowledge and belief, there are no other currently pending related appeals, interferences or judicial proceedings.

STATUS OF CLAIMS

This application is a continuation of application serial no. 09/268,242, now U.S. Patent No.

6,768,728. Original Claims 1-30 were filed on December 2, 2003. Claim 24 was amended in an Amendment under 37 C.F.R. §1.116(b)(2) filed August 15, 2008. Thus, Claims 1-30 are pending in the Appeal. Claims 1, 11, 24 and 26 are in independent form.

Claims 9, 17-19, 22 and 30 have been objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form to include all of the limitations of the base claim and any intervening claims.[1]

For the purposes of this Appeal, Claims 1-8, 10-16, 20, 21, 23, 28 and 29 stand or fall together; and, Claims 24-27 stand or fall together.

STATUS OF AMENDMENTS

Thus, the Appendix to this Appeal Brief includes Claims 1-30 of which the status of Claims 1-23 and 25-30 is indicated as "Original", and the status of Claim 24 is indicated as "Previously Presented".

SUMMARY OF CLAIMED SUBJECT MATTER

The invention as recited in Claim 1 relates to a transmission device for a wireless communication system. The device includes a first message generator for encoding first input data of a first bit stream to generate a first frame message having a first frame length (Specification at page

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[1] In an Office Action dated August 22, 2007 an Obviousness-type Double Patenting (ODP) rejection was raised. On November 11, 2007 Appellants filed a Terminal Disclaimer. In an Office Action dated February 21, 2008 receipt of the Terminal Disclaimer was acknowledged, but Claims 9, 17, 18 and 22 were not addressed in the Office Action. On March 19, 2008 Applicants representative conducted an Examiner's Interview with the Examiner to determine the status of Claims 9, 17, 18 and 22, during which an agreement was reached; the Examiner stated that these claims are now objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form to include all of the limitations of the base claim and any intervening claims, and, additionally, since Claims 19 and 30 depend from Claim 17 (either directly or indirectly) the Examiner stated that these claims are also objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form to include all of the limitations of the base claim and any intervening claims. An Examiner's Interview Summary dated March 19, 2008 was issued confirming the agreement reached during the Examiner's Interview. On May 21, 2008 Appellants filed a Response confirming the agreement reached during the Examiner's Interview. In the Advisory Action dated June 19, 2008, the status of Claims 9, 17-19, 22 and 30 were mistakenly listed as "rejected" rather than as "objected to"; Appellants respectfully make note of this oversight.

16, lines 18-20, FIG. 5)[2]. The device also includes a second message generator for encoding second input data of a second bit stream longer than the first bit stream to generate a second frame message having a second frame length longer than the first frame length. (Specification at page 17, lines 8-10, FIG. 5). The device further includes a multiplexer for replacing a portion of the second frame message with the first frame message. (Specification at page 17, lines 11-18, FIG. 5). The device still further includes a spreader for spreading an output of the multiplexer. (Specification at page 18, lines 18-21, FIG. 5).

The invention as recited in Claim 11 relates to a data transmission method in a wireless communication system. The method includes encoding first input data of a first bit stream to generate a first frame message having a first frame length. (Specification at page 9, lines 22-31, page 15, lines 13-30, FIGs. 8A and 8B). The method also includes encoding second input data of a second bit stream longer than said first bit stream to generate a second frame message having a second frame length longer than said first frame length. (Specification at page 15, lines 13-30). The method further includes replacing a portion of the second frame message with the first frame message. (Specification at page 9, lines 25-30). The method still further includes transmitting the first frame message in place of the replaced portion of the second frame message. (Specification at page 10, lines 1-6).

The invention as recited in Claim 24 relates to a receiving device for a wireless communication system. The device includes a despreader for despreading a received signal. (Specification at page 33, lines 15-16, FIG. 15). The device further includes a first message receiver for deinterleaving the despread signal by the first frame length and decoding the deinterleaved signal to generate a first frame message. (Specification at page 33, lines 17-26, FIG. 15). The device still further includes a second message receiver for deinterleaving the despread signal by the second frame length and decoding the deinterleaved signal to generate a second frame message. (Specification at page 33, lines 19-28, FIG. 15).

The invention as recited in Claim 26 relates to a data receiving method in a spread spectrum communication system. The method includes deinterleaving the despread signal by the first frame

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[2] Although a citation for each feature of the claims is provided herein, Appellants do not concede the fact that support may be found elsewhere in the written description.

length and decoding the deinterleaved signal to generate a first frame message. (Specification at page 33, lines 17-26). The method further includes deinterleaving the despread signal by the second frame length and decoding the deinterleaved signal to generate a second frame message. (Specification at page 33, lines 19-28).

GROUNDS FOR REJECTION TO BE REVIEWED ON APPEAL

Whether Claims 1-8, 10-16, 19-21 and 23-30 are unpatentable under 35 U.S.C. §103(a) as obvious over U.S. Patent 5,909,434 to Odenwalder (Odenwalder) in view of U.S. Patent 6,031,827 to Rikkinen (Rikkinen).

ARGUMENT

1. Independent Claim 1 is patentable over Odenwalder and Rikkinen

Independent Claim 1 was said to be rendered obvious by Odenwalder and Rikkinen.[3]

The invention as recited in Claim 1 relates to a transmission device for a wireless communication system. The device includes a first message generator for encoding first input data of a first bit stream to generate a first frame message having a first frame length. The device also includes a second message generator for encoding second input data of a second bit stream longer than the first bit stream to generate a second frame message having a second frame length longer than the first frame length. The device further includes a multiplexer for replacing a portion of the second frame message with the first frame message. The device still further includes a spreader for spreading an output of the multiplexer.

Odenwalder discloses bright and burst mode signaling data transmission in an adjustable rate wireless communication system.[4]

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[3] See Office Action dated February 21, 2008, at page 2.

[4] See Odenwalder, at title and abstract.

Rikkinen discloses a method for radio resource control.[5]

1A. The combination of Odenwalder and Rikkinen does not teach or disclose generating a first frame message and generating a second frame message, and therefore Odenwalder in view of Rikkinen cannot render Claim 1 unpatentable

The present invention relates to an apparatus and method to transmit/receive messages having different frame lengths. Particularly, when a shorter frame message (a first frame message) is generated during the transmission of a longer frame message (a second frame message), the transmission of the longer frame message is interrupted, whereupon the shorter frame message is immediately transmitted.

Claim 1 recites, in part, generating a first frame message and generating a second frame message. Two distinct frame messages are generated. By definition "a first frame message" is different from "a second frame message"; any position that holds that "a first frame message" is not distinct from "a second frame message" would amount to a complete failure in understanding claim interpretation. The Examiner contends that the claims do not recite two frame messages, and therefore gave no weight to these arguments previously presented in prior filed Responses.[6]

The rejection relies on Odenwalder as allegedly disclosing this feature.[7] In its description of its frame generator, Odenwalder states that its frame generator generates *a frame* from both the signal data and user data.[8] Odenwalder generates one frame.

The generation of one frame is not and cannot be equated with the generation of two distinct frame messages. Rikkinen does not cure these defects of Odenwalder.

Accordingly, Odenwalder does not teach or suggest generating a first frame message and generating a second frame message, as recited by Claim 1. Rikkinen does not cure the deficiencies of Odenwalder.

Since the combination of Odenwalder and Rikkinen does not teach or disclose the recitation

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[5] See Rikkinen, at title and abstract.

[6] See Advisory Action dated June 19, 2008.

[7] See Office Action dated February 21, 2008 at pages 2-3.

[8] See Odenwalder at col. 3, lines 19-30.

of Claim 1 of the present application, of generating a first frame message and generating a second frame message, Claim 1 cannot be rendered obvious over Odenwalder in view of Rikkinen.

Based on at least the foregoing it is respectfully submitted that the rejection of Claim 1 under 35 U.S.C. §103(a) must be reversed.

1B. The combination of Odenwalder and Rikkinen does not teach or disclose generating a first frame message having a first frame length and generating a second frame message having a second frame length longer than the first frame length, and therefore Odenwalder in view of Rikkinen cannot render Claim 1 unpatentable

Claim 1 recites a first message generator to generate a first frame message having a first frame length and a second message generator to generate a second frame message having a second frame length longer than the first frame length.

The rejection relies on Odenwalder for allegedly disclosing this feature.[9]

Claim 1 of the present application recites an apparatus to transmit messages having different frame lengths, upon generating a first frame message and a second frame message of different lengths.

Odenwalder is directed to controlling symbol repetition rate and puncturing rate, and transmitting the same number of symbols (768 symbols) to the frame having an identical frame length (20 ms), regardless of whether input data is user data or signalling data.

Referring to Table 1 in Odenwalder and its description,[10] the total number of code symbols per frame **equals 768 symbols/frame** by varying a repetition rate and a puncture rate according to various data input rates. Odenwalder discloses that if user data is transmitted at 24 kbps, the symbol repetition rate is set to 1 and the puncture ratio is set to 1 of 4, as shown in Table 1, so that the user data is transmitted at 768 symbols/frame. And, if signaling data is transmitted together with the user data, the combination is transmitted at 25.6 kbps. Therefore the signaling data and the user data are transmitted at 768 symbols/frame by using the symbol repetition rate set to 1 and the puncture rate set to 5 of 17, as shown in Table 1. This is clearly described at col. 6, lines 41-50 of Odenwalder

Odenwalder discloses that regardless of the user data or the signaling data, an identical

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[9] See Office Action dated February 21, 2008 at pages 2-3.

number of symbols, i.e., 768, per frame having an identical frame length (i.e. 20 ms),[11] are transmitted by controlling the symbol repetition rate and the puncture rate.

On the contrary, Claim 1 of the present application provides that while a message including frames having a general length, i.e., second frame length (20 ms), is transmitted, if a transmission of a message including frames having a length (5 ms), which is shorter than the general length, is requested, the message including frames having a general length and the message including frames having the short length are transmitted. That is, a message that includes frames having different lengths from each other is transmitted.

Accordingly, Odenwalder does not teach or suggest generating a first frame message having a first frame length and a second message generator to generate a second frame message having a second frame length longer than the first frame length, as recited by Claim 1. Rikkinen does not cure the deficiencies of Odenwalder.

Since the combination of Odenwalder and Rikkinen does not teach or disclose the recitation of Claim 1 of the present application, of a first message generator to generate a first frame message having a first frame length and a second message generator to generate a second frame message having a second frame length longer than the first frame length, Claim 1 cannot be rendered obvious over Odenwalder in view of Rikkinen.

Based on at least the foregoing it is respectfully submitted that the rejection of Claim 1 under 35 U.S.C. §103(a) must be reversed.

1C. The combination of Odenwalder and Rikkinen does not teach or disclose replacing a portion of the second frame message with the first frame message, and therefore Odenwalder in view of Rikkinen cannot render Claim 1 unpatentable

Claim 1 recites, in part, replacing a portion of the second frame message with the first frame message, that is, the replacement of part of one distinct frame message with another frame message.

The rejection relies on Rikkinen as allegedly disclosing this feature.[12]

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[10] See Odenwalder at col. 5, lines 37-39.

[11] See Odenwalder at col. 3, line 24.

[12] See Office Action dated February 21, 2008 at page 3.

In its description of frame structuring, Rikkinen states that a slot of a frame can be modularized.[13] One slot can be divided into different sized slots.

Moreover, Rikkinen teaches, "replacing a frame with different sized slots and different data". The Examiner alleged that the present invention can be derived from the combination of Odenwalder and Rikkinen. However, Rikkinen merely discloses that it may change a frame structure.

On the contrary, the present invention does not relate to changing a frame structure, but relates to how to transmit messages having different frame lengths.

Odenwalder does not cure these defects of Rikkinen. The combination of Odenwalder and Rikkinen still results in only one frame that may be inserted into different sized slots, which is not and cannot be equated with generating a first frame message and generating a second frame message and replacing a portion of the second frame message with the first frame message as recited in Claim 1.

Dividing a slot into different sized slots is not and cannot be equated with replacing a portion of the second frame message with the first frame message.

Accordingly, Rikkinen does not teach or suggest replacing a portion of the second frame message with the first frame message, as recited by Claim 1. Odenwalder does not cure the deficiencies of Rikkinen.

Since the combination of Odenwalder and Rikkinen does not teach or disclose the recitation of Claim 1 of the present application, of replacing a portion of the second frame message with the first frame message, Claim 1 cannot be rendered obvious over Odenwalder in view of Rikkinen.

Based on at least the foregoing it is respectfully submitted that the rejection of Claim 1 under 35 U.S.C. §103(a) must be reversed.

1D. Independent Claim 1 is not rendered obvious by Odenwalder in view of Rikkinen

The Examiner has failed to show that each and every element of Claim 1, and in as complete detail as is contained therein, are taught in or suggested by the prior art. The Examiner has failed to make out a prima facia case for an obviousness rejection, and thus Claim 1 is allowable.

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[13] See Rikkinen at col. 5, lines 41-45.

1E. <u>Dependent Claims 2-8, 10 and 28 are patentable over Odenwalder in view of Rikkinen</u>

Without conceding the patentability per se of dependent Claims 2-8, 10 and 28, these claims are likewise believed to be allowable by virtue of at least their dependence on Claim 1.

2. <u>Independent Claim 11 is patentable over Odenwalder in view of Rikkinen</u>

Independent Claim 11 was said to be rendered obvious by Odenwalder and Rikkinen.[14]

The invention as recited in Claim 11 relates to a data transmission method in a wireless communication system. The method includes encoding first input data of a first bit stream to generate a first frame message having a first frame length. The method also includes encoding second input data of a second bit stream longer than said first bit stream to generate a second frame message having a second frame length longer than said first frame length. The method further includes replacing a portion of the second frame message with the first frame message. The method still further includes transmitting the first frame message in place of the replaced portion of the second frame message.

Odenwalder discloses bright and burst mode signaling data transmission in an adjustable rate wireless communication system.[15]

Rikkinen discloses a method for radio resource control.[16]

2A. <u>Independent Claim 11 is not rendered obvious by Odenwalder in view of Rikkinen</u>

Independent Claim 11 was said to be rendered obvious by Odenwalder in view of Rikkinen.[17] Claim 11 recites similar features as Claim 1. For at least the reasons set forth above, Claim 11 is patentable over Odenwalder in view of Rikkinen.

The Examiner has failed to show that each and every element of Claim 11, and in as complete detail as is contained therein, are taught in or suggested by the prior art. The Examiner has failed to

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[14] See Office Action dated February 21, 2008, at page 2.

[15] See Odenwalder, at title and abstract.

[16] See Rikkinen, at title and abstract.

[17] See Office Action dated February 21, 2008 at page 6.

make out a prima facia case for an obviousness rejection, and thus Claim 11 is allowable.

2B. Dependent Claims 12-16, 20, 21, 23 and 29 are patentable over Odenwalder in view of Rikkinen

Without conceding the patentability per se of dependent Claims 12-16, 20, 21, 23 and 29, these claims are likewise believed to be allowable by virtue of at least their dependence on Claim 11.

3. Independent Claim 24 is patentable over Odenwalder in view of Rikkinen

Independent Claim 24 was said to be rendered obvious by Odenwalder and Rikkinen.[18]

The invention as recited in Claim 24 relates to a receiving device for a wireless communication system. The device includes a despreader for despreading a received signal. The device further includes a first message receiver for deinterleaving the despread signal by the first frame length and decoding the deinterleaved signal to generate a first frame message. The device still further includes a second message receiver for deinterleaving the despread signal by the second frame length and decoding the deinterleaved signal to generate a second frame message.

Odenwalder discloses bright and burst mode signaling data transmission in an adjustable rate wireless communication system.[19]

Rikkinen discloses a method for radio resource control.[20]

3A. The combination of Odenwalder and Rikkinen does not teach or disclose a first frame message and a second frame message, and therefore Odenwalder in view of Rikkinen cannot render Claim 24 unpatentable

Again, the present invention relates to an apparatus and method to transmit/receive messages having different frame lengths. Particularly, when a shorter frame message (a first frame message) is generated during the transmission of a longer frame message (a second frame message), the transmission of the longer frame message is interrupted, whereupon the shorter frame message is immediately transmitted.

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[18] See Office Action dated February 21, 2008, at page 2.

[19] See Odenwalder, at title and abstract.

[20] See Rikkinen, at title and abstract.

Claim 24 recites, in part, a first message receiver to generate a first frame message and a second message receiver to generate a second frame message. Two distinct frame messages are generated. Again, by definition "a first frame message" is different from "a second frame message"; any position that holds that "a first frame message" is not distinct from "a second frame message" would amount to a complete failure in understanding claim interpretation. The Examiner contends that the claims do not recite two frame messages, and therefore gave no weight to these arguments previously presented in prior filed Responses.[21]

The rejection relies on Odenwalder as allegedly disclosing this feature.[22] In its description of its frame generator, Odenwalder states that its frame generator generates *a frame* from both the signal data and user data.[23] Odenwalder generates one frame.

Claim 24 recites decoding a signal to generate a first frame message and decoding the signal to generate a second frame message. Again, in its description of its frame generator, Odenwalder states that its frame generator generates a frame from both the signal data and user data,[24] i.e. Odenwalder generates one frame.

The generation of one frame is not and cannot be equated with the decoding of a signal to generate two distinct frame messages. Rikkinen does not cure these defects of Odenwalder

Accordingly, Odenwalder does not teach or suggest a first message receiver to generate a first frame message and a second message receiver to generate a second frame message, as recited by Claim 24. Rikkinen does not cure the deficiencies of Odenwalder.

Since the combination of Odenwalder and Rikkinen does not teach or disclose the recitation of Claim 24 of the present application, of a first message receiver to generate a first frame message and a second message receiver to generate a second frame message, Claim 24 cannot be rendered obvious over Odenwalder in view of Rikkinen.

Based on at least the foregoing it is respectfully submitted that the rejection of Claim 24 under 35 U.S.C. §103(a) must be reversed.

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[21] See Advisory Action dated June 19, 2008.

[22] See Office Action dated February 21, 2008 at page 9.

[23] See Odenwalder at col. 3, lines 19-30.

[24] See Odenwalder at col. 3, lines 19-30

3B. The combination of Odenwalder and Rikkinen does not teach or disclose generating a first frame message having a first frame length and generating a second frame message having a second frame length longer than the first frame length, and therefore Odenwalder in view of Rikkinen cannot render Claim 24 unpatentable

Claim 24 recites, in part, a first message receiver for deinterleaving a despread signal by a first frame length and a second message receiver for deinterleaving the despread signal by a second frame length.

The rejection relies on Odenwalder for allegedly disclosing this feature.[25]

Claim 24 recites deinterleaving the despread signal by the first frame length and deinterleaving the despread signal by the second frame length.

Odenwalder is directed to controlling symbol repetition rate and puncturing rate, and transmitting the same number of symbols (768 symbols) to the frame having an identical frame length (20 ms), regardless of whether input data is user data or signalling data.

Referring to Table 1 in Odenwalder and its description,[26] the total number of code symbols per frame **equals 768 symbols/frame** by varying a repetition rate and a puncture rate according to various data input rates. Odenwalder discloses that if user data is transmitted at 24 kbps, the symbol repetition rate is set to 1 and the puncture ratio is set to 1 of 4, as shown in Table 1, so that the user data is transmitted at 768 symbols/frame. And, if signaling data is transmitted together with the user data, the combination is transmitted at 25.6 kbps. Therefore the signaling data and the user data are transmitted at 768 symbols/frame by using the symbol repetition rate set to 1 and the puncture rate set to 5 of 17, as shown in Table 1. This is clearly described at col. 6, lines 41-50 of Odenwalder

Odenwalder discloses that regardless of the user data or the signaling data, an identical number of symbols, i.e., 768, per frame having an identical frame length (i.e. 20 ms),[27] are transmitted by controlling the symbol repetition rate and the puncture rate.

On the contrary, Claim 24 of the present application provides that while a message including

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[25] See Office Action dated February 21, 2008 at page 9.

[26] See Odenwalder at col. 5, lines 37-39.

[27] See Odenwalder at col. 3, line 24.

frames having a general length, i.e., second frame length (20 ms), is transmitted, if a transmission of a message including frames having a length (5 ms), which is shorter than the general length, is requested, the message including frames having a general length and the message including frames having the short length are transmitted. That is, a message that includes frames having different lengths from each other is transmitted.

Odenwalder transmits at only one frame length, i.e. 20 ms, and thus the frames are received at only one frame length, 20 ms.[28]

Accordingly, Odenwalder does not teach or suggest a first message receiver for deinterleaving a despread signal by a first frame length and a second message receiver for deinterleaving the despread signal by a second frame length, as recited by Claim 24. Rikkinen does not cure the deficiencies of Odenwalder.

Since the combination of Odenwalder and Rikkinen does not teach or disclose the recitation of Claim 24 of the present application, of a first message receiver for deinterleaving a despread signal by a first frame length and a second message receiver for deinterleaving the despread signal by a second frame length, Claim 24 cannot be rendered obvious over Odenwalder in view of Rikkinen.

Based on at least the foregoing it is respectfully submitted that the rejection of Claim 24 under 35 U.S.C. §103(a) must be reversed.

3C. Independent Claim 24 is not rendered obvious by Odenwalder in view of Rikkinen

The Examiner has failed to show that each and every element of Claim 24, and in as complete detail as is contained therein, are taught in or suggested by the prior art. The Examiner has failed to make out a prima facia case for an obviousness rejection, and thus Claim 24 is allowable.

3D. Dependent Claim 25 is patentable over Odenwalder in view of Rikkinen

Without conceding the patentability per se of dependent Claim 25, this claim is likewise believed to be allowable by virtue of at least its dependence on Claim 24.

4. Independent Claim 26 is patentable over Odenwalder in view of Rikkinen

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[28] See Odenwalder at col. 3, line 24.

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Independent Claim 26 was said to be rendered obvious by Odenwalder and Rikkinen.[29]

The invention as recited in Claim 26 relates to a data receiving method in a spread spectrum communication system. The method includes deinterleaving the despread signal by the first frame length and decoding the deinterleaved signal to generate a first frame message. The method further includes deinterleaving the despread signal by the second frame length and decoding the deinterleaved signal to generate a second frame message.

Odenwalder discloses bright and burst mode signaling data transmission in an adjustable rate wireless communication system.[30]

Rikkinen discloses a method for radio resource control.[31]

4A. Independent Claim 26 is not rendered obvious by Odenwalder in view of Rikkinen

Independent Claim 26 was said to be rendered obvious by Odenwalder in view of Rikkinen.[32] Claim 26 recites similar features as Claim 24. For at least the reasons set forth above, Claim 26 is patentable over Odenwalder in view of Rikkinen.

The Examiner has failed to show that each and every element of Claim 26, and in as complete detail as is contained therein, are taught in or suggested by the prior art. The Examiner has failed to make out a prima facia case for an obviousness rejection, and thus Claim 26 is allowable.

4B. Dependent Claim 27 is patentable over Odenwalder in view of Rikkinen

Without conceding the patentability per se of dependent Claim 27, this claim is likewise believed to be allowable by virtue of at least its dependence on Claim 26.

CONCLUSION

As the Examiner has failed to make out a prima facie case for an obviousness rejection, the

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[29] See Office Action dated February 21, 2008, at page 2.

[30] See Odenwalder, at title and abstract.

[31] See Rikkinen, at title and abstract.

[32] See Office Action dated February 21, 2008 at page 6.

rejection of Claims 1-8, 10-16, 20, 21 and 23-29 must be reversed.

It is well settled that in order for a rejection under 35 U.S.C. §103(a) to be appropriate, the claimed invention must be shown to be obvious in view of the prior art as a whole. A claim may be found to be obvious if it is first shown that all of the recitations of a claim are taught in the prior art or are suggested by the prior art. In re Royka, 490 F.2d 981, 985, 180 U.S.P.Q. 580, 583 (C.C.P.A. 1974), cited in M.P.E.P. §2143.03.

The Examiner has failed to show that all of the recitations of Claims 1-8, 10-16, 20, 21 and 23-29 are taught or suggested by Odenwalder in view of Rikkinen. Accordingly, the Examiner has failed to make out a prima facie case for an obviousness rejection.

Independent Claims 1, 11, 24 and 26 are not rendered unpatentable by Odenwalder in view of Rikkinen. Therefore, the rejections of Claims 1-8, 10-16, 20, 21 and 23-29 must be reversed.

Dated: September 17, 2008

By:_____

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CLAIMS APPENDIX

1. (Original) A transmission device for a wireless communication system, comprising:

a first message generator for encoding first input data of a first bit stream to generate a first frame message having a first frame length;

a second message generator for encoding second input data of a second bit stream longer than the first bit stream to generate a second frame message having a second frame length longer than the first frame length;

a multiplexer for replacing a portion of the second frame message with the first frame message; and

a spreader for spreading an output of the multiplexer.

2. (Original) The transmission device as claimed in claim 1, wherein the first frame message and the second frame message are multiplexed when the first frame message is generated during transmission of the second frame message.

3. (Original) The transmission device as claimed in claim 1, wherein the multiplexer intermixingly outputs, in sequence, a portion of the second frame message, the replaced first frame message and a remaining portion of the second frame message.

4. (Original) The transmission device as claimed in claim 1, wherein the multiplexer intermixingly outputs, in sequence, the replaced first frame message and the second frame message from which a portion corresponding to the first frame message is deleted.

5. (Original) The transmission device as claimed in claim 3, further comprising a power controller for increasing a transmission power of the remaining portion of the second frame message, following the replaced first frame message, to be higher than that of the first frame message.

6. (Original) The transmission device as claimed in claim 1, wherein the first frame message

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has a frame length of 5ms and the second frame message has a frame length of 20ms.

7. (Original) The transmission device as claimed in claim 1, wherein the second frame message generator comprises:

a cyclic redundancy check (CRC) generator for generating CRC bits according to the second input data of the second frame length;

a tail bit generator for generating tail bits and adding the generated tail bits to an output of the CRC generator;

a channel encoder for encoding the tail bit-added second frame data at a predefined coding rate; and

an interleaver for interleaving the encoded frame message by the second frame length.

8. (Original) The transmission device as claimed in claim 7, wherein the interleaver uniformly distribute symbols generated by encoding one data bit over the respective durations of the whole frame.

9. (Original) The transmission device as claimed in claim 8, wherein the interleaver is designed according to a delete matrix given by

$$D_1 = \begin{bmatrix} 01110111\bullet\bullet\bullet \\ 10111011\bullet\bullet\bullet \\ 11011101\bullet\bullet\bullet \end{bmatrix}$$

10. (Original) The transmission device as claimed in claim 1, wherein the spreader comprises:

an orthogonal code spreader for spreading the frame message output from the multiplexer with an orthogonal code for a dedicated control channel; and

a pseudo-random noise (PN) spreader for spreading an output of the orthogonal code spreader with a PN sequence.

11. (Original) A data transmission method in a wireless communication system, comprising the steps of:

encoding first input data of a first bit stream to generate a first frame message having a first frame length;

encoding second input data of a second bit stream longer than said first bit stream to generate a second frame message having a second frame length longer than said first frame length;

replacing a portion of the second frame message with the first frame message; and

transmitting the first frame message in place of the replaced portion of the second frame message.

12. (Original) The data transmission method as claimed in claim 11, wherein the first frame message and the second frame message are multiplexed when the first frame message is generated during transmission of the second frame message.

13. (Original) The data transmission method as claimed in claim 11, wherein a portion of the second frame message, the first frame message and a remaining portion of the second frame message are intermixingly output in sequence, in said replacing step.

14. (Original) The data transmission method as claimed in claim 11, wherein the first frame message and the second frame message from which a portion corresponding to the first frame message is deleted, are intermixingly output in sequence, in said replacing step.

15. (Original) The data transmission method as claimed in claim 13, further comprising the step of increasing a transmission power of the remaining portion of the second frame message, following the first frame message, to be higher than that of the first frame message.

16. (Original) The data transmission method as claimed in claim 11, wherein the first frame message has a frame length of 5ms and the second frame message has a frame length of 20ms.

17. (Original) The data transmission method as claimed in claim 16, wherein a portion of the second frame message is deleted to insert the first frame message into the deleted portion for a second duration, and the remaining portion of the second frame message is output for third and fourth durations, in said replacing step.

18. (Original) The data transmission method as claimed in claim 17, wherein a portion of the second frame message is deleted to insert the first frame message in the deleted portion for a first duration, and the remaining portion of the second frame message is output for second, third and fourth durations, in said replacing step.

19. (Original) The data transmission method as claimed in claim 17, further comprising the step of increasing the transmission power of the remaining portion of the second frame message, following the inserted first frame message.

20. (Original) The data transmission method as claimed in claim 11, wherein the second frame message generation step comprises the steps of:
    generating CRC bits according to second data input of the second frame length;
    generating tail bits and adding the generated tail bits to the CRC bit-added second data;
    encoding the tail bit-added second frame data at a predefined coding rate; and
    interleaving symbols of the encoded second frame data by the second frame length.

21. (Original) The data transmission method as claimed in claim 20, wherein symbols generated by encoding one data bit are uniformly distributed over the respective durations of the whole frame, in said interleaving step.

22. (Original) The data transmission method as claimed in claim 21, wherein the symbols are distributed according to a delete matrix given by

$$D_1 = \begin{bmatrix} 01110111\bullet\bullet\bullet \\ 10111011\bullet\bullet\bullet \\ 11011101\bullet\bullet\bullet \end{bmatrix}$$

23. (Original) The data transmission method as claimed in claim 11, wherein the transmission step comprises the steps of:

spreading the frame message with an orthogonal code; and

spreading an orthogonal spread signal with a PN sequence.

24. (Previously Presented) A receiving device for a wireless communication system comprising:

a despreader for despreading a received signal;

a first message receiver for deinterleaving the despread signal by the first frame length and decoding the deinterleaved signal to generate a first frame message; and

a second message receiver for deinterleaving the despread signal by the second frame length and decoding the deinterleaved signal to generate a second frame message.

25. (Original) The wireless communication system as claimed in claim 24, wherein the multiplexer multiplexes the first frame message and the second frame message when the first frame message is generated during transmission of the second frame message.

26. (Original) A data receiving method in a spread spectrum communication system, comprising the steps of:

deinterleaving the despread signal by the first frame length and decoding the deinterleaved signal to generate a first frame message; and

deinterleaving the despread signal by the second frame length and decoding the deinterleaved signal to generate a second frame message.

27. (Original) The data exchanging method as claimed in claim 26, wherein the first frame

message and the second frame message are multiplexed when the first frame message is generated during transmission of the second frame message.

28. (Original) The transmission device as claimed in claim 4, further comprising a power controller for increasing a transmission power of the remaining portion of the second frame message, following the replaced first frame message, to be higher than that of the first frame message.

29. (Original) The data transmission method as claimed in claim 14, further comprising the step of increasing a transmission power of the remaining portion of the second frame message, following the first frame message, to be higher than that of the first frame message.

30. (Original) The data transmission method as claimed in claim 18, further comprising the step of increasing the transmission power of the remaining portion of the second frame message, following the inserted first frame message.

EVIDENCE APPENDIX

There is no evidence submitted pursuant to 37 C.F.R. 1.130, 1.131, 1.132 or entered by the Examiner and relied upon by Appellant.

RELATED PROCEEDINGS APPENDIX

There are no known decisions rendered by a court or the Board in any proceeding identified pursuant to paragraph (c)(1)(ii) of 37 C.F.R. 41.37.